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Evaluation of the Danish surveillance of footpad lesions in organic and conventional broilers



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BACKGROUND

Footpad dermatitis (FPD) as an indicator of on-farm broiler welfare → Danish official surveillance system since 2002 with payment and enforcement implications. As originally developed for conventional broilers, the usability for organic broilers has not yet been investigated

OBJECTIVES

Evaluation of performance of the official Danish FPD surveillance system with respect to potential sources of misclassification and the effect of the sampling strategy in both organic and conventional broiler feet

Scoring system

Sampling strategy

The Danish FPD surveillance system:

2 x 50 feet per broiler flock

Score 0: No or very minor lesions

Score 1: Less severe lesions

Score 2: Severe lesions

FPD flock score = 0.5 * (number of feet scored 1) + 2 * (number of feet scored 2)

MATERIALS & METHODS

Comparison of official FPD scores of 1,799 broiler feet (~100 per flock, from 9 organic and 9 conventional flocks) and scores by a laboratory reference method, based on predefined visual and invasive scoring criteria derived from the official system

MATERIALS & METHODS

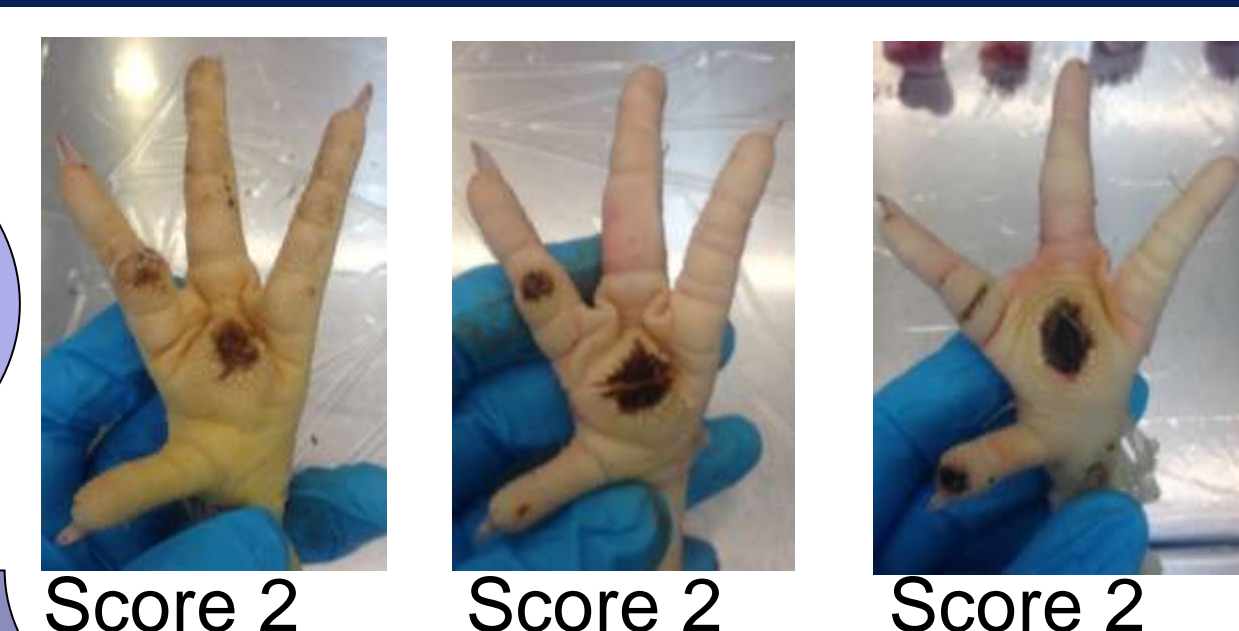
Comparison of official FPD flock scores of paired samples of feet (2 x 50 feet from the first and last third of every flock processed) of 11,628 conventional broiler flocks processed during a 2.5 year period (~99.6% of Danish production)

RESULTS

Wide range of severity



Cut-off point?



Impact of making an incision?



Differences between organic and conventional broiler feet

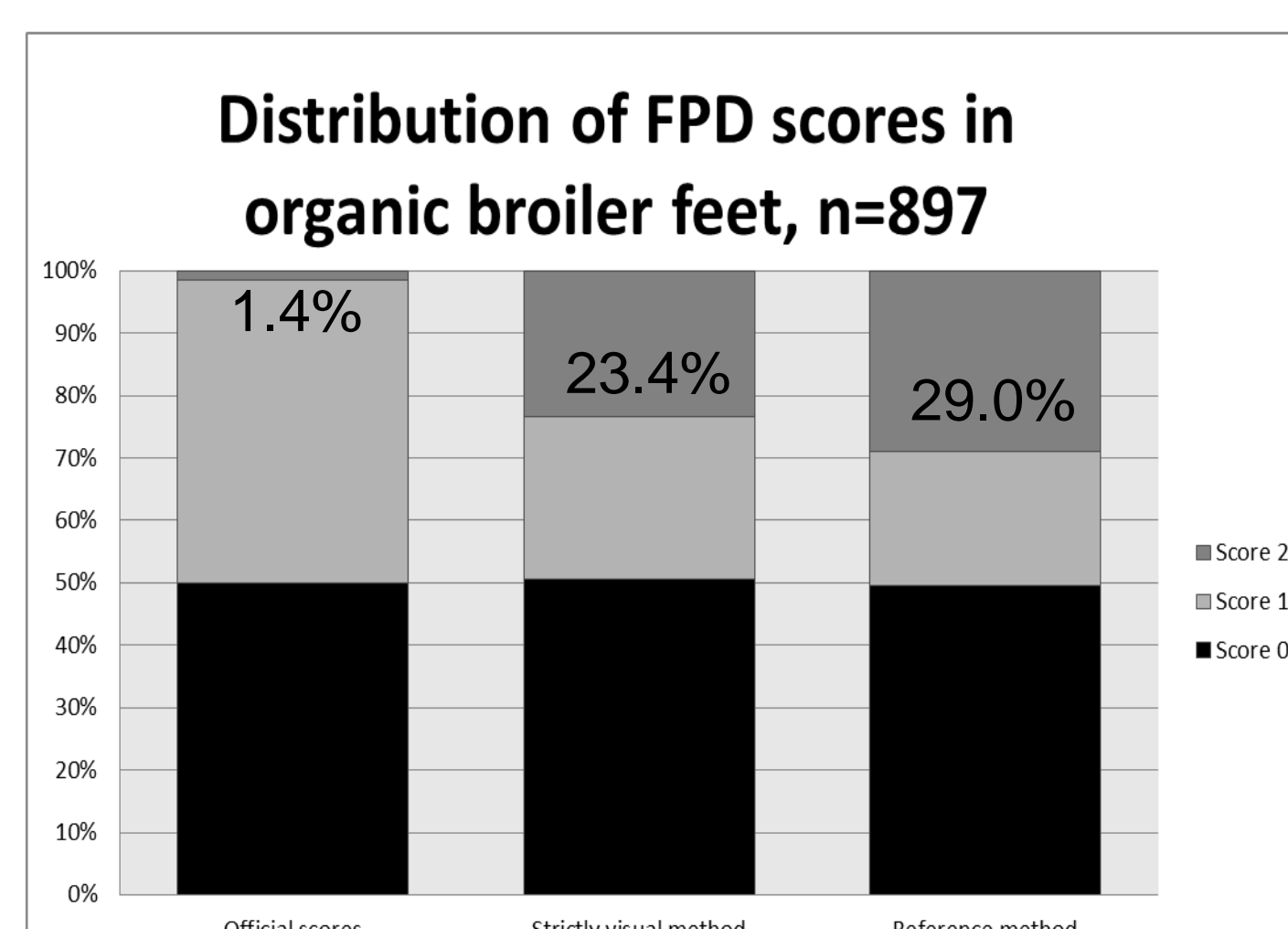
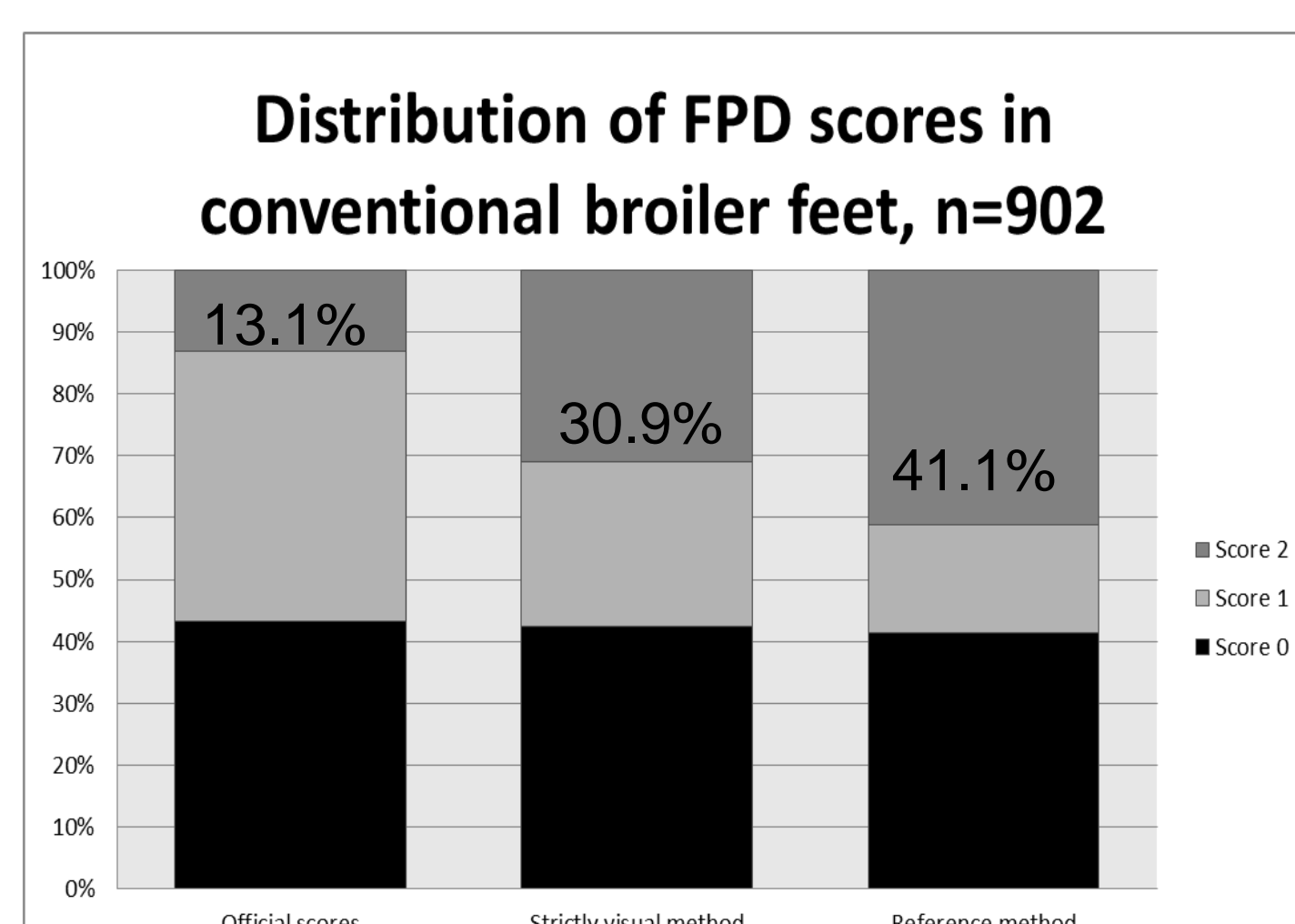
- Shape, colour and skin quality → less characteristic lesions in organic feet
- Higher degree of hyperkeratosis and hypertrophy of papillae in organic feet

An association between lesion size and depth was observed

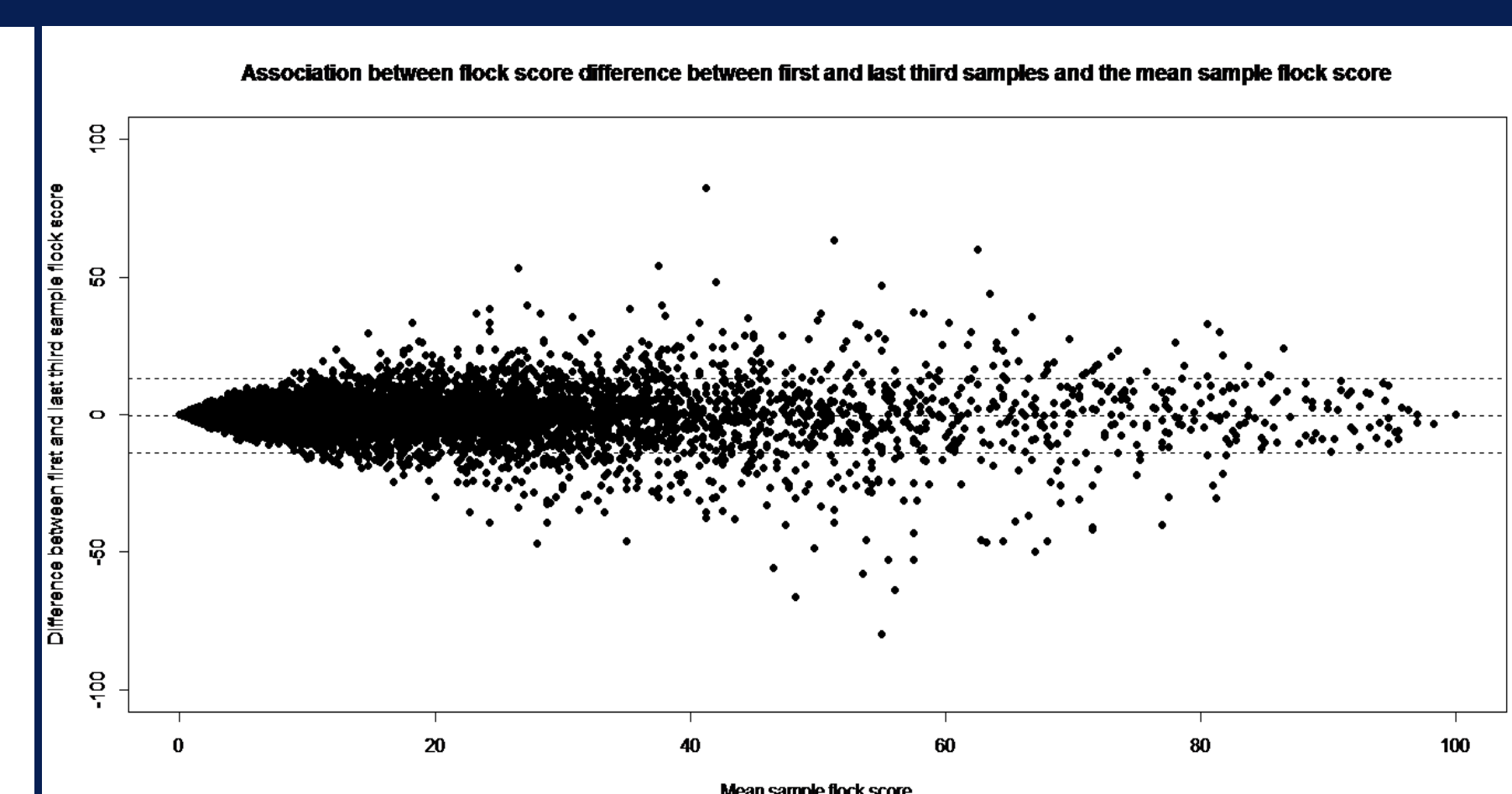
Strictly visual examination had reduced sensitivity (0.73-0.75) for detection of severe lesions compared to adding an incision of the footpad during scoring

Marked differences between official and laboratory scores

- Disagreement highly restricted to scores 1 and 2 → evidence of underestimation of lesion severity in organic and conventional feet
- Disagreement more pronounced in organic feet compared to conventional, which was attributed to the organic lesions being more difficult to score



Evidence of some degree of selection bias, especially in flocks with middle range flock scores, possibly due to insufficient randomisation



Focus for future improvements to FPD surveillance systems

Objectivity:

Objective criteria to minimise room for interpretation by describing the full range of lesion severity

Randomisation:

Sampling of feet for scoring needs to be representative of the flock

Feasibility:

Criteria needs to be feasible to evaluate under time constraints in commercial conditions

Trustworthy scoring results



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